

**Wednesday 20th.**

## **I. Minutes Review**

- Spelt Alternative instead of Alternator.

## **II. Discuss Design Tasks and the Division of Labor**

- Half wave rectifier inside the alternator and if we rip the diodes out of there, it allows our alternator to act as a motor. Until then, diodes will make the alternator act like a generator. Also, we have a lot of control over the motor because we have control of the field current.
- Control of the alternator: Control Circuitry of IGBT on the inverter, inverter, and that's about it. Maybe some control circuitry for the field. One other thing, the DC to AC.
- Battery which is single phase, create an inverter, to go from DC to AC, somehow get three phase which is connected to the motor.
- Use the micro controller to send signals to the IGBTs
- Open the gates with all the correct timing to turn on the transistors.
- One more crucial step, if the motor is too much too massive for the system, and we speed it up and increase to fast, the motor might slip a pole.
- We want to design it to where, if the motors frequency is too high, we slow the motor down, so it can catch it again.
- Volts per Hertz curve, which is the output torque for a motor.
- Need a DC to DC converter to control the battery.
- Use the PWM of the switches as our DC converter.
- Closed loop control, we can set the speed compared to open loop where we can only control the voltage.

Hai: Motor Testing

Armando: MCU research

Val: Inverter Design

## **III. Wiki Page and Minutes Uploads (Optional)**

- Everything is fine